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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,948	12/13/2001	Robert Hundt	10019984-1	7386

7590 11/03/2004

HEWLETT-PACKARD COMPANY
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EXAMINER
KANG, INSUN

ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/016,948	HUNDT ET AL.
	Examiner	Art Unit
	Insun Kang	2124

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/13/2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/13/2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1. This action is responding to application papers filed 12/13/2004.

2. Claims 1-21 are pending in the application.

Drawings

3.   This application has been filed with the informal drawings. The informal drawings

are of sufficient quality to permit examination. However, the formal drawings are

required upon allowance.

Specification

4.   The disclosure is objected to because of the following informalities: there

appears to be a typographical error in page 11, line 7. It appears that "301" needs to be

corrected to "305" as "301" indicates the instrumentor.

Appropriate correction is required.

Double Patenting

5.   The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the
unjustified or improper timewise extension of the "right to exclude" granted by a patent
and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11
F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225
USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA
1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*,
418 F.2d 528, 163 USPQ 644 (CCPA 1969).
A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be
used to overcome an actual or provisional rejection based on a nonstatutory double

patenting ground provided the conflicting application or patent is shown to be commonly
owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a
terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with
37 CFR 3.73(b).

6.   Claims 1, 6, 7, 8, 13, 14, 15, 20, and 21 are provisionally rejected under the

judicially created doctrine of obviousness-type double patenting over claims 1, 15, 21,

23, 29, and 31 of copending Application No. 10/016955 (US Pub. No. 20030115582).

Although the conflicting claims are not identical, they are not patentably distinct

from each other because they are directed to substantially the same invention and

recites only obvious differences which would have been obvious to one of ordinary

skill in the art of program development at the time of invention such as simply (i)

omitting/adding steps or elements along with their functions, and/or (ii) implementing

the method steps with means for performing the steps, and/or (iii) computer program

implementation of the method, and/or (iv) implementing an apparatus, a computer-

readable medium having computer program for performing the method steps, as

explained below.

The corresponding claims are as follows:

Per claim 1:

Copending claim 1 recites **A computer-implemented method for lazily**

registering dynamically generated code and corresponding unwind information of

a process, said method comprising ("A computer-implemented method for registering

dynamically generated code and corresponding unwind information, said method comprising")

The co-pending claim 1 does not explicitly recite the step of **a) detecting a request for first unwind information related to first corresponding dynamically generated code,** as recited in the instant claim 1. The step of "creating a module which includes data related to dynamically generated code and corresponding unwind information" is inherently performed after the unwind information related to the corresponding dynamically generated code has been identified because a request for such data, in order to have data related to dynamically generated code and corresponding unwind information, should have been made first.   Therefore, it would have been obvious for one having ordinary skill in the art of program development at the time the instant invention was made to modify the co-pending method by adding the step of **a) detecting a request for first unwind information related to first corresponding dynamically generated code** recited in the instant claim 1 for the purpose of expediting the method.

Copending claim 1 further recites:

b) creating a module which includes data related to said first unwind information and said first corresponding dynamically generated code ("creating a module which includes data related to dynamically generated code and corresponding unwind information")

    c) providing an application program interface which allows said data to be registered such that dynamic registration of said first unwind information and said first corresponding dynamically generated code is enabled ("providing an application program interface which allows said data to be registered such that dynamic registration of said dynamically generated code and said corresponding unwind information is enabled")

    d) coupling an application program interface invocation code sequence to said first corresponding dynamically generated code such that upon execution of said first corresponding dynamically generated code, said application program interface invocation code sequence instructs said application program interface to facilitate registration of said data ("coupling an application program interface invocation code sequence to said dynamically generated code such that upon execution of said dynamically generated code, said application program interface invocation code sequence instructs said application program interface to facilitate registration of said data") as recited in instant claim 1.

Per claim 6:

    The rejection of claim 1 is incorporated, and further, the instant claim recites the additional limitation regarding instrumented code as a dynamically generated code, which corresponds to copending claim 15.

Per claim 7:

The rejection of claim 1 is incorporated, and further, the instant claim recites the additional limitation regarding instrumented code as a dynamically generated code, which corresponds to copending claim 15.

Per claims 8, 13, and 14:

The rejection of claims 1, 6, and 7 is respectively incorporated, and further, the instant claims recite a computer-readable medium corresponding to copending claims 21 and 23 respectively, modified in the manner set forth above in connection with claims 1, 6, and 7 respectively. It would have been obvious for one of ordinary skill in the art of program development to implement the copending method modified in the manner set forth above with a computer-readable medium including means for performing the steps of the copending method.

Per claims 15, 20, and 21:

The rejection of claims 1, 6, and 7 is respectively incorporated, and further, the instant claims recite an apparatus corresponding to copending claims 29 and 31 respectively, modified in the manner set forth above in connection with claims 1, 6, and 7 respectively. It would have been obvious for one of ordinary skill in the art of program development to implement the copending method modified in the manner set forth above with an apparatus including means for performing the steps of the copending method.

This is a <u>provisional</u> obviousness-type double patenting rejection because the

conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8.   Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by

Applicant's Admitted Prior Art (hereinafter referred to as "APA") disclosed in the

background section of the instant application.

Per claim 1:

APA discloses:

a) detecting a request for first unwind information related to first corresponding

dynamically generated code (APA, "The pseudo-modules are utilized by the software

component seeking to register an instrumented function along with its unwind

information," page 3 lines 1-25)

b) creating a module which includes data related to said first unwind information and

said first corresponding dynamically generated code (APA, "pseudo-modules are

created. These pseudo-modules contain data about the dynamically generated

code(e.g. instrumented code) and the corresponding unwind information," page 3 lines

10-25)

c) providing an application program interface which allows said data to be registered

such that dynamic registration of said first unwind information and said first

corresponding dynamically generated code is enabled (APA, "an application program

interface invocation code sequence is coupled to the dynamically generated code. The

application program interface invocation code sequence operates in conjunction with

the application program interface to facilitate the use of the pseudo-modules during

registration of the unwind information," page 3 lines 1-25)

d) coupling an application program interface invocation code sequence to said first

corresponding dynamically generated code such that upon execution of said first

corresponding dynamically generated code, said application program interface

invocation code sequence instructs said application program interface to facilitate

registration of said data (APA, "an application program interface invocation code

sequence is coupled to the dynamically generated code. The application program

interface invocation code sequence operates in conjunction with the application

program interface to facilitate the use of the pseudo-modules during registration of the

unwind information," page 3 lines 1-25) as claimed.

Per claim 2:

The rejection of claim 1 is incorporated, and further, APA discloses:

- e) repeating steps b) through d) for second dynamically generated code wherein said

second dynamically generated code was produced prior to producing said first unwind

information and said first corresponding dynamically generated code, and generating

unwind information corresponding to said second dynamically generated code (APA,

"This registration, enabled by the pseudo-modules, in a centralized place allows easy

and effective synchronization and eliminates the need to update unwind tables," page 3

lines 1-25) as claimed.

Per claim 3:

The rejection of claim 2 is incorporated, and further, APA discloses:

- step e) is performed only when said second dynamically generated code has a

corresponding return address which is called by said first corresponding dynamically

generated code (APA, "This registration, enabled by the pseudo-modules, in a

centralized place allows easy and effective synchronization and eliminates the need to

update unwind tables," page 3 lines 1-25) as claimed.

Per claim 4:

The rejection of claim 1 is incorporated, and further, APA discloses:

-detecting said request for said first unwind information related to said first

corresponding dynamically generated code by intercepting a call to a stack unwinding

mechanism (APA, "This registration, enabled by the pseudo-modules, in a centralized

place allows easy and effective synchronization and eliminates the need to update

unwind tables," page 3 lines 1-25) as claimed.

Per claim 5:

The rejection of claim 4 is incorporated, and further, APA discloses:

- said corresponding return address of said second corresponding dynamically

generated code is obtained by an address mechanism coupled to said stack unwinding

mechanism (APA, "an IA-64 architecture by Intel…the runtime architecture uses unwind

information to perform the task of unwinding…"an application program interface

invocation code sequence is coupled to the dynamically generated code. The

application program interface invocation code sequence operates in conjunction with

the application program interface to facilitate the use of the pseudo-modules during

registration of the unwind information," page 3 lines 1-25) as claimed.

Per claim 6:

The rejection of claim 1 is incorporated, and further, APA, Hundt, and Cierniak disclose:

-said first corresponding dynamically generated code is comprised of instrumented code

(APA, "dynamically generated code (e.g. the instrumented code)," page 3 lines 1-25) as

claimed.

Per claim 7:

The rejection of claim 1 is incorporated, and further, APA, Hundt, and Cierniak disclose:

-said second corresponding dynamically generated code is comprised of instrumented

code (APA, "dynamically generated code (e.g. the instrumented code)," page 3 lines 1-

25) as claimed.

Per claims 8-14, they are the computer-readable medium versions of claims 1-7,

respectively, and are rejected for the same reasons set forth in connection with the

rejection of claims 1-7 above.

Per claims 15-21, they are the apparatus versions of claims 1-7, respectively,

and are rejected for the same reasons set forth in connection with the rejection of claims

1-7 above.

9.   Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hundt

(HP Caliper- An Architecture for Performance Analysis Tool, 10/2000).

Per claim 1:

Hundt discloses:

a) detecting a request for first unwind information related to first corresponding

dynamically generated code (Hundt, page 2 HP Caliper Architecture, page 3 paragraph

2-3, page 4 4. Dynamic Instrumentation, first paragraph)

b) creating a module which includes data related to said first unwind information and

said first corresponding dynamically generated code (Hundt, Caliper API, Fig 1, section

4.1 Algorithm)

c) providing an application program interface which allows said data to be registered

such that dynamic registration of said first unwind information and said first

corresponding dynamically generated code is enabled (Hundt, Caliper API, Fig 1,

section 4.1 Algorithm)

d) coupling an application program interface invocation code sequence to said first

corresponding dynamically generated code such that upon execution of said first

corresponding dynamically generated code, said application program interface

invocation code sequence instructs said application program interface to facilitate

registration of said data (Hundt, Caliper API, Fig 1, page 5-6 section 4.1 Algorithm) as

claimed.

Per claim 2:

The rejection of claim 1 is incorporated, and further, Hundt discloses:

- e) repeating steps b) through d) for second dynamically generated code wherein said

second dynamically generated code was produced prior to producing said first unwind

information and said first corresponding dynamically generated code, and generating

unwind information corresponding to said second dynamically generated code (Hundt,

section 4.1 Algorithm, page 5, right column, paragraphs 6-7, page 6, right column,

paragraphs 3-5) as claimed.

Per claim 3:

The rejection of claim 2 is incorporated, and further, Hundt discloses:

- step e) is performed only when said second dynamically generated code has a

corresponding return address which is called by said first corresponding dynamically

generated code (Hundt, section 4.1, page 6, right column, paragraphs 3-5, and 7) as

claimed.

Per claim 4:

The rejection of claim 1 is incorporated, and further, Hundt discloses:

-detecting said request for said first unwind information related to said first

corresponding dynamically generated code by intercepting a call to a stack unwinding

mechanism (Hundt, section 4.1, page 6, right column, paragraphs 3-5, and 7) as

claimed.

Per claim 5:

The rejection of claim 4 is incorporated, and further, Hundt discloses:

- said corresponding return address of said second corresponding dynamically

generated code is obtained by an address mechanism coupled to said stack unwinding

mechanism (Hundt, section 4.1, page 6, right column, paragraphs 3-5, and 7) as

claimed.

Per claim 6:

The rejection of claim 1 is incorporated, and further, Hundt discloses:

-said first corresponding dynamically generated code is comprised of instrumented code

(Hundt, page 5 right column, 4.1 Algorithm, dynamic instrumentation algorithm, 1.Attach

and Inject) as claimed.

Per claim 7:

The rejection of claim 1 is incorporated, and further, Hundt discloses:

-said second corresponding dynamically generated code is comprised of instrumented

code (Hundt, page 5 right column, 4.1 Algorithm, dynamic instrumentation algorithm,

1.Attach and Inject) as claimed.

Per claims 8-14, they are the computer-readable medium versions of claims 1-7,

respectively, and are rejected for the same reasons set forth in connection with the

rejection of claims 1-7 above.

Per claims 15-21, they are the apparatus versions of claims 1-7, respectively,

and are rejected for the same reasons set forth in connection with the rejection of claims

1-7 above.

10.   Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Cierniak

et al. (Practicing JUDO : Java™ Under Dynamic Optimizations, 5/2000) hereinafter

referred to as "Cierniak."

Per claim 1:

Cierniak discloses:

a) detecting a request for first unwind information related to first corresponding

dynamically generated code (Cierniak, page 19, 5.1 Dynamic inline patching, page 20

5.4 Lazy Exceptions)

b) creating a module which includes data related to said first unwind information and

said first corresponding dynamically generated code (Cierniak, page 19, 5.1 Dynamic

inline patching, page 20 5.4 Lazy Exceptions)

c) providing an application program interface which allows said data to be registered

such that dynamic registration of said first unwind information and said first

corresponding dynamically generated code is enabled (Cierniak, page 19, 5.1 Dynamic

inline patching, page 20 5.4 Lazy Exceptions)

d) coupling an application program interface invocation code sequence to said first

corresponding dynamically generated code such that upon execution of said first

corresponding dynamically generated code, said application program interface

invocation code sequence instructs said application program interface to facilitate

registration of said data (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4

Lazy Exceptions) as claimed.

Per claim 2:

The rejection of claim 1 is incorporated, and further, Cierniak discloses:

- e) repeating steps b) through d) for second dynamically generated code wherein said

second dynamically generated code was produced prior to producing said first unwind

information and said first corresponding dynamically generated code, and generating

unwind information corresponding to said second dynamically generated code

(Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions) as

claimed.

Per claim 3:

The rejection of claim 2 is incorporated, and further, Cierniak discloses:

- step e) is performed only when said second dynamically generated code has a

corresponding return address which is called by said first corresponding dynamically

generated code (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy

Exceptions) as claimed.

Per claim 4:

The rejection of claim 1 is incorporated, and further, Cierniak discloses:

-detecting said request for said first unwind information related to said first

corresponding dynamically generated code by intercepting a call to a stack unwinding

mechanism (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy

Exceptions) as claimed.

Per claim 5:

The rejection of claim 4 is incorporated, and further, Cierniak discloses:

- said corresponding return address of said second corresponding dynamically

generated code is obtained by an address mechanism coupled to said stack unwinding

mechanism (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy

Exceptions) as claimed.

Per claim 6:

The rejection of claim 1 is incorporated, and further, Cierniak discloses:

-said first corresponding dynamically generated code is comprised of instrumented code

(Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions) as

claimed.

Per claim 7:

The rejection of claim 1 is incorporated, and further, Cierniak discloses:

-said second corresponding dynamically generated code is comprised of instrumented

code (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions) as

claimed.

Per claims 8-14, they are the computer-readable medium versions of claims 1-7,

respectively, and are rejected for the same reasons set forth in connection with the

rejection of claims 1-7 above.

Per claims 15-21, they are the apparatus versions of claims 1-7, respectively,

and are rejected for the same reasons set forth in connection with the rejection of claims

1-7 above.

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Insun Kang whose telephone number is 571-272-3724.

The examiner can normally be reached on M-F 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kakali Chaki can be reached on 571-272-3719. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

I. Kang
Patent Examiner
10/20/2004

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